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Mendel

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(54) **HOOP-TYPE AMUSEMENT DEVICE AND COUNTER**

(71) Applicant: **Nancy Mendel**, Palm Beach, FL (US)

(72) Inventor: **Nancy Mendel**, Palm Beach, FL (US)

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This patent is subject to a terminal disclaimer.

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(22) Filed: **Jul. 9, 2013**

Related U.S. Application Data

(63) Continuation-in-part of application No. 13/267,079, filed on Oct. 6, 2011, now Pat. No. 8,480,450, which is a continuation of application No. 12/041,141, filed on Mar. 3, 2008, now Pat. No. 8,033,891, which is a continuation-in-part of application No. 10/953,428, filed on Sep. 29, 2004, now Pat. No. 7,338,339, which is a continuation-in-part of application No. 10/446,925, filed on Sep. 29, 2003, now Pat. No. 6,966,814.

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A63H 33/02 (2006.01)
A63B 19/00 (2006.01)

(52) **U.S. Cl.**
CPC ***A63H 33/02*** (2013.01); ***A63B 19/00*** (2013.01)

(58) **Field of Classification Search**
USPC 446/85, 236; 482/7, 11, 542.2, 542.6
See application file for complete search history.

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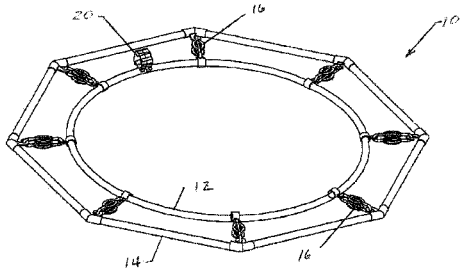
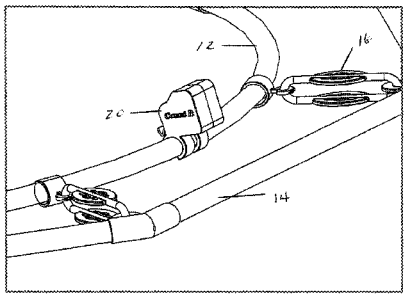
Primary Examiner — John Ricci
(74) *Attorney, Agent, or Firm* — Mark D. Bowen; Malin Haley DiMaggio & Bowen, P.A.

(57) **ABSTRACT**

The present invention provides an improved hoop-type amusement device adapted with a counter for counting the number of revolutions achieved by the user. The counter is preferably adapted for attachment to any of a variety of hoop type devices, including the HULA HOOP, as well as specially configured hoop type devices, such as the type that may be formed from a plurality of variously sized and shaped connectable components that are selectively interconnected by the user to form a simple or complex hoop configuration of a particular desired size and shape. The counter functions to count the number of revolutions achieved by the user thereby allowing the user to monitor and gage performance.

4 Claims, 15 Drawing Sheets





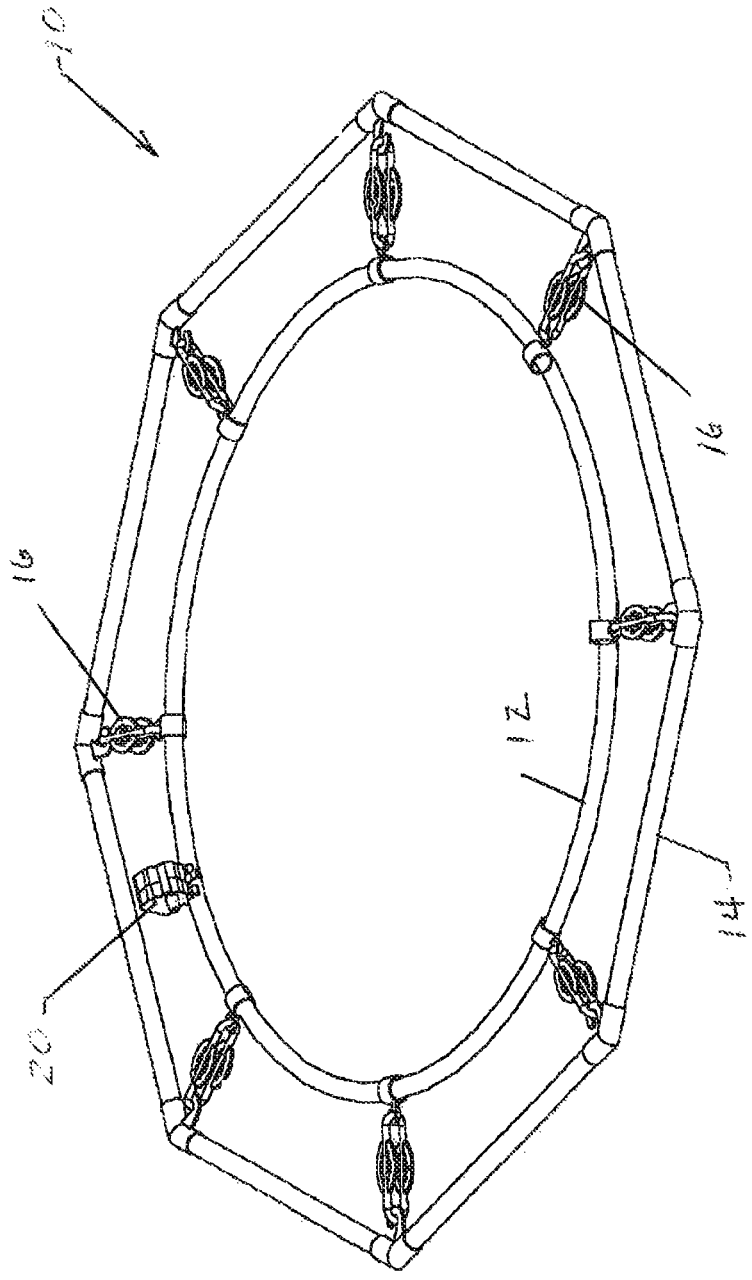


Fig. 1

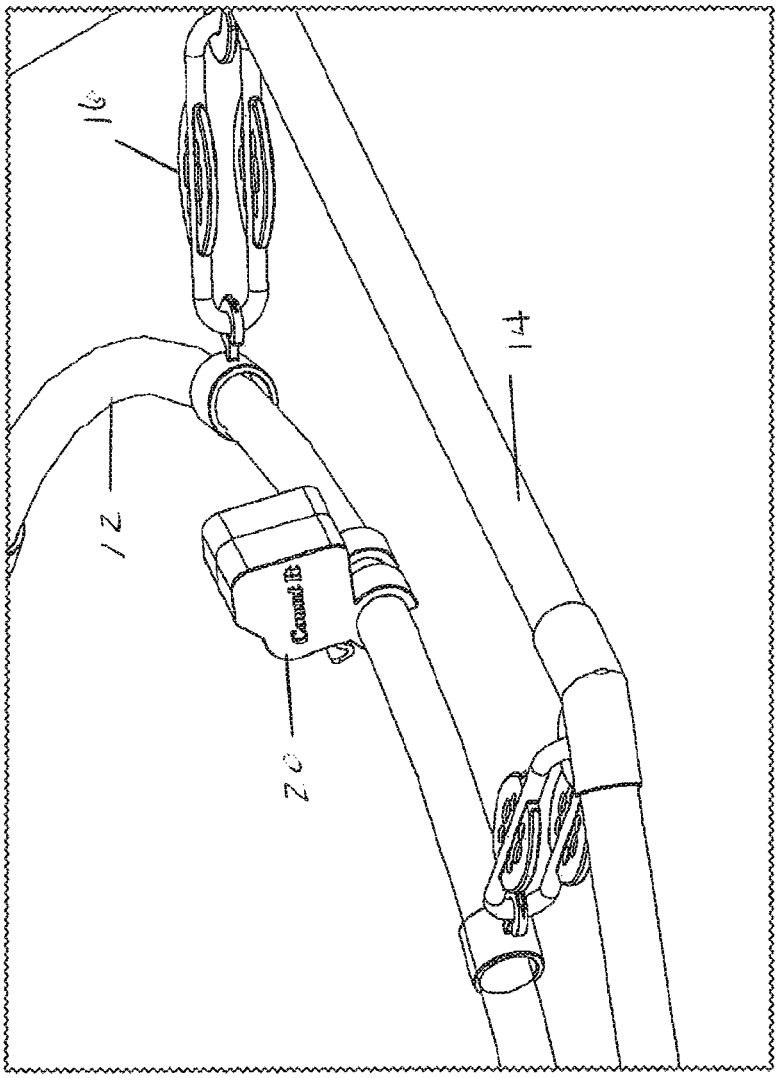


Fig. 2

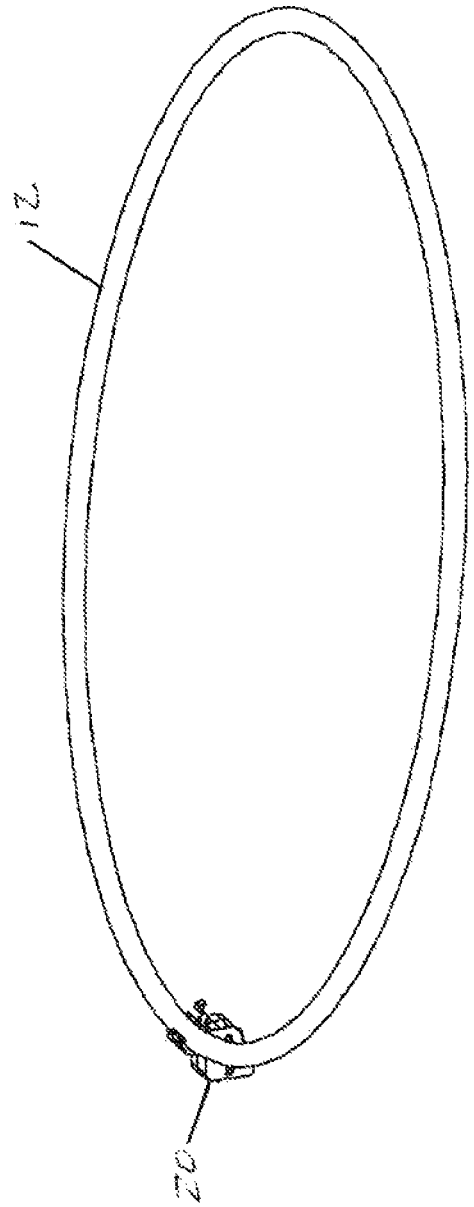


Fig. 3

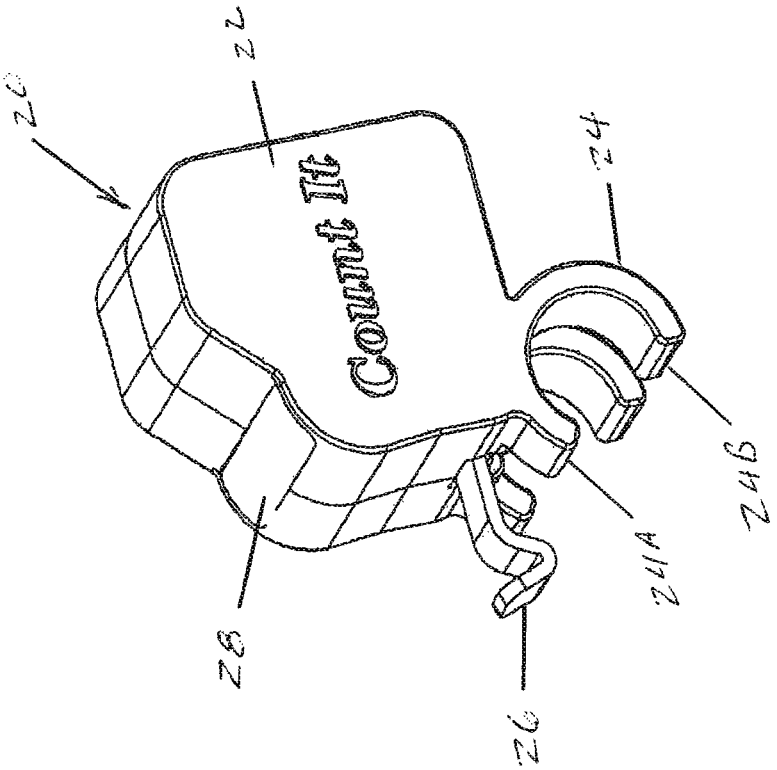


Fig. 4

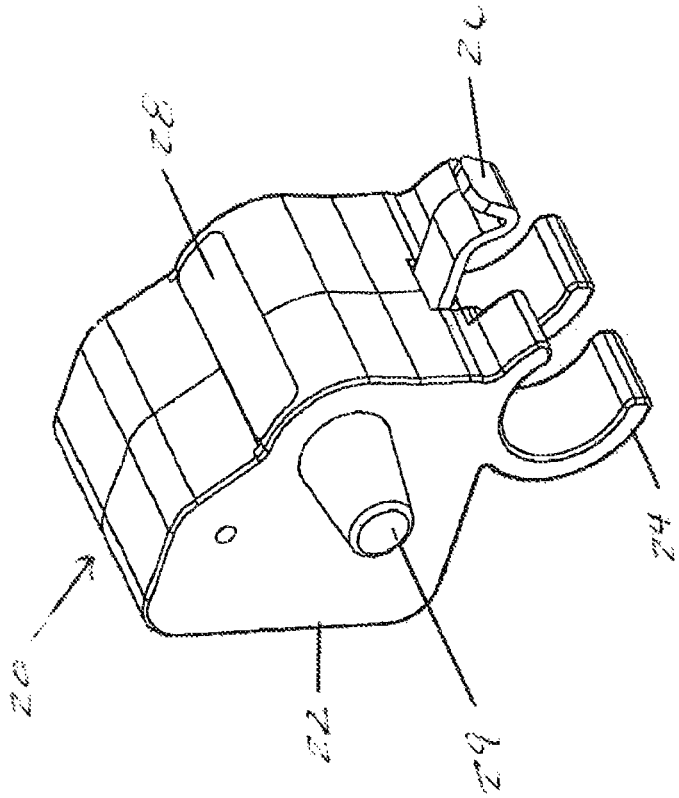


Fig. 5

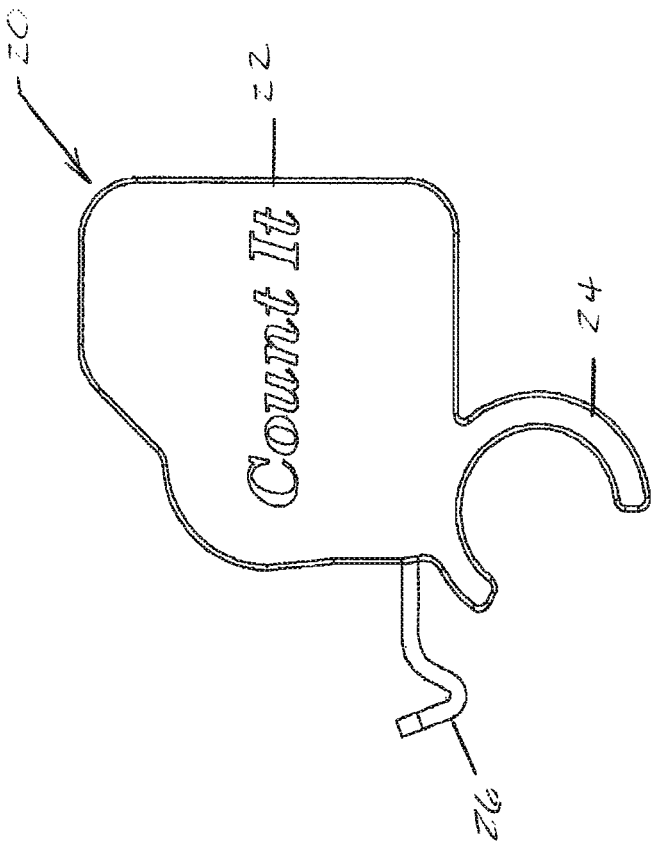


Fig. 6

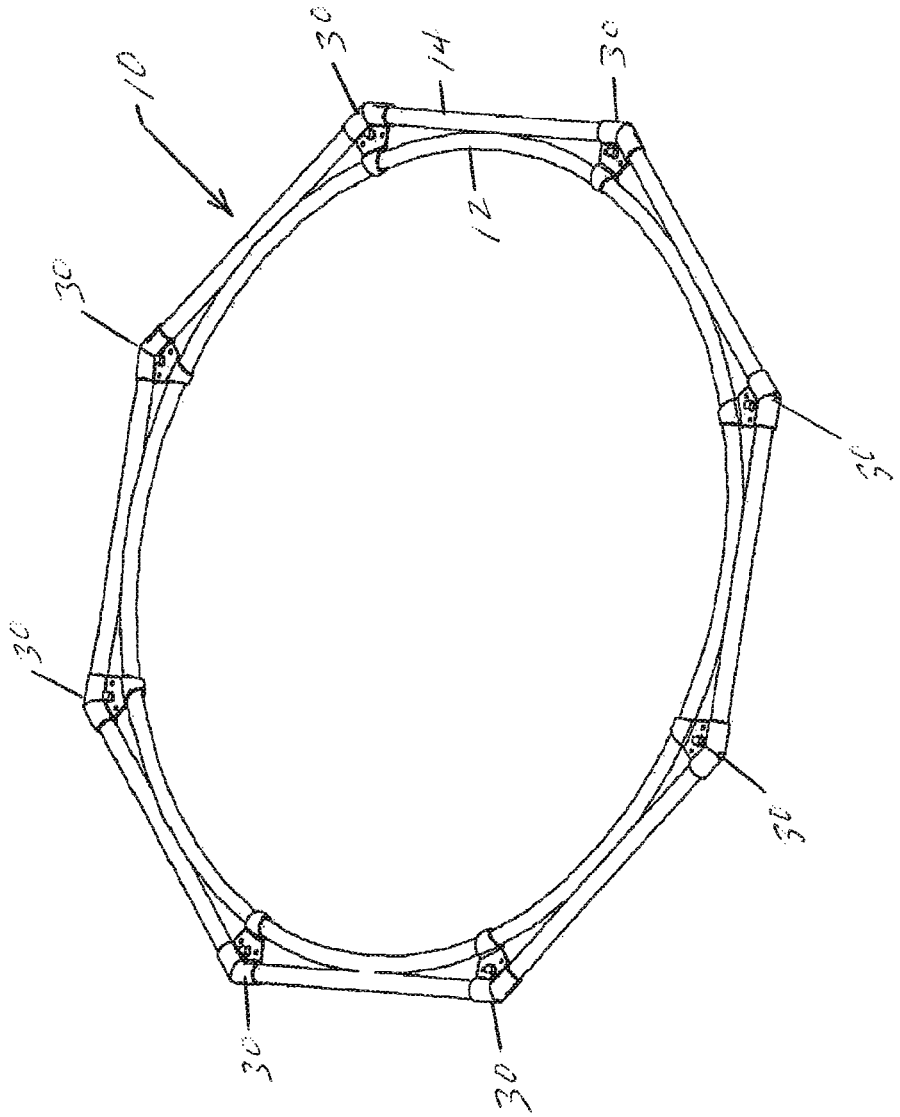


Fig. 7

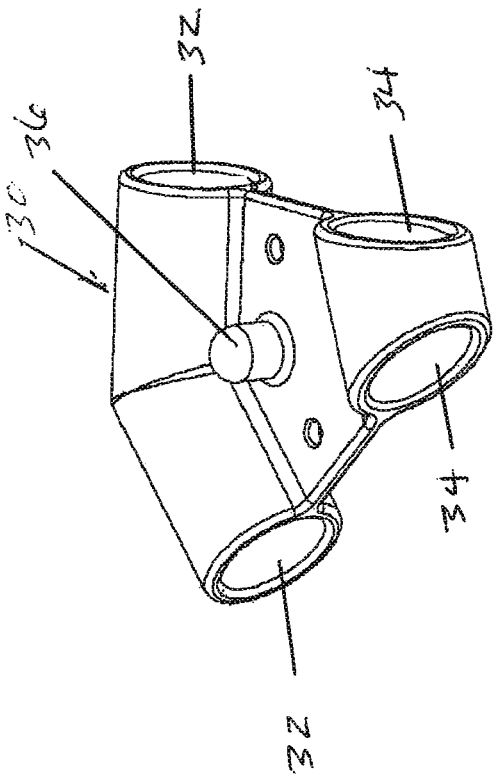


Fig. 8

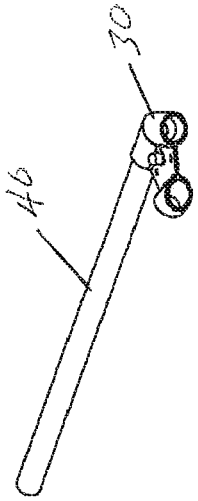


Fig. 9

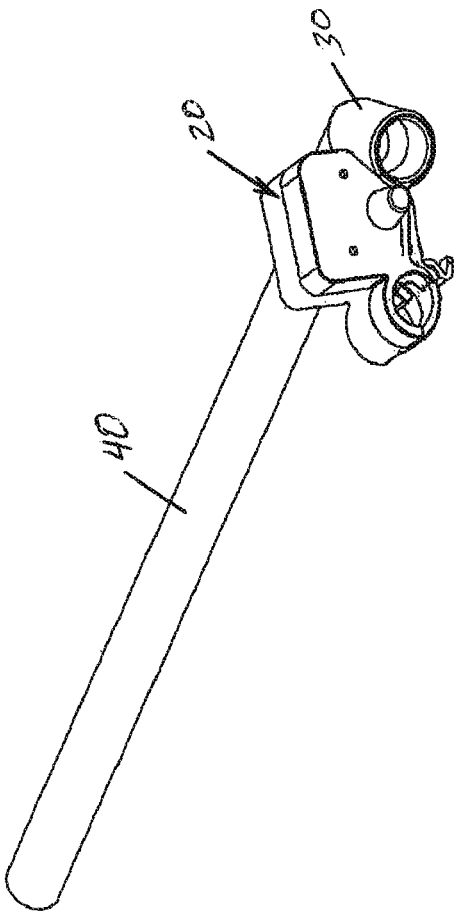


Fig. 10

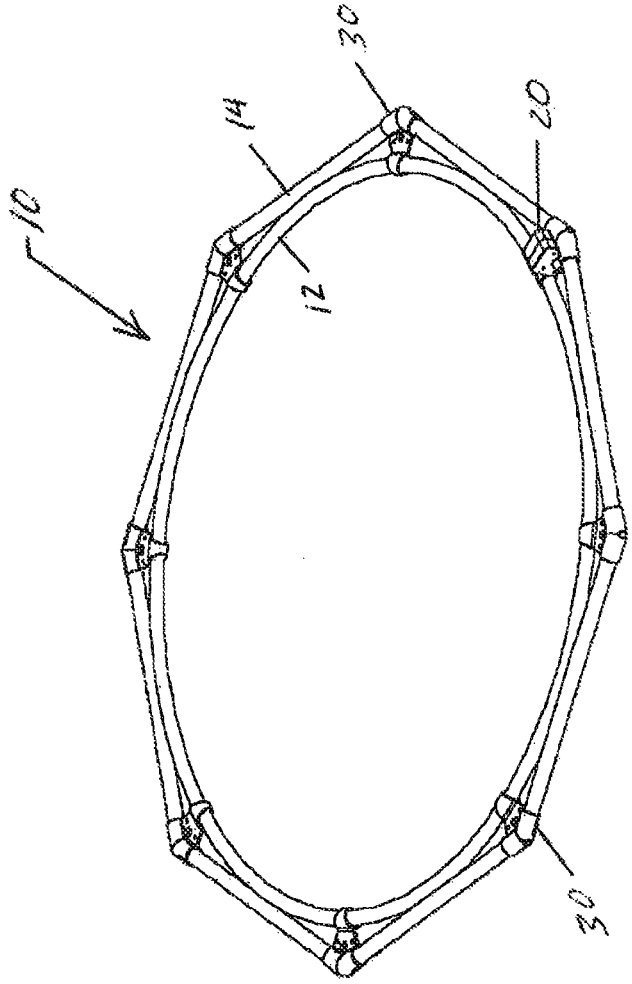


Fig. 11

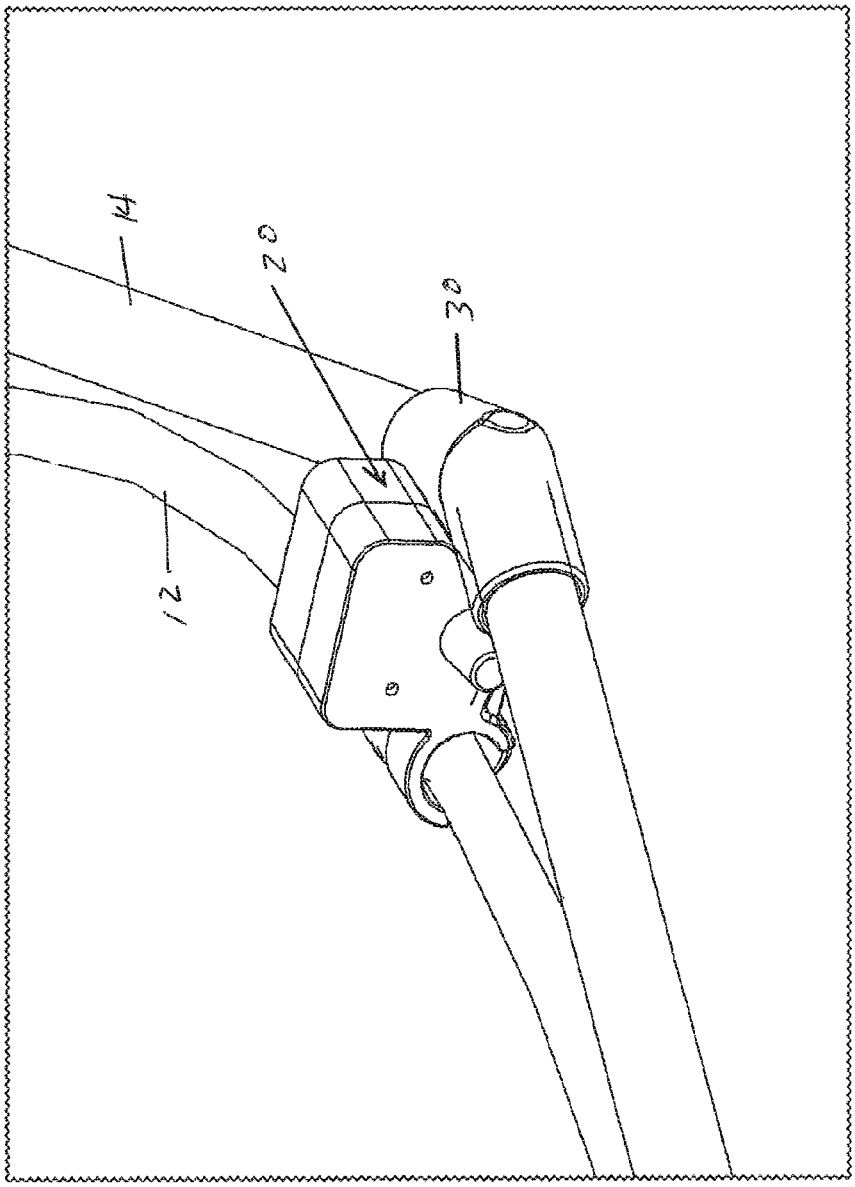


Fig. 12

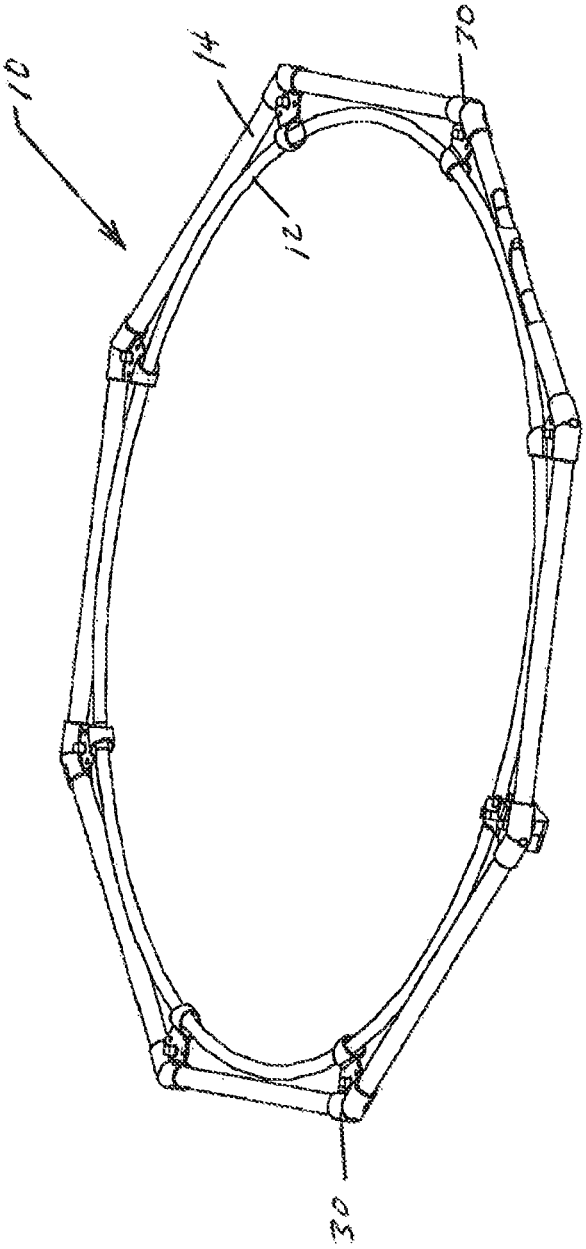


Fig. 13

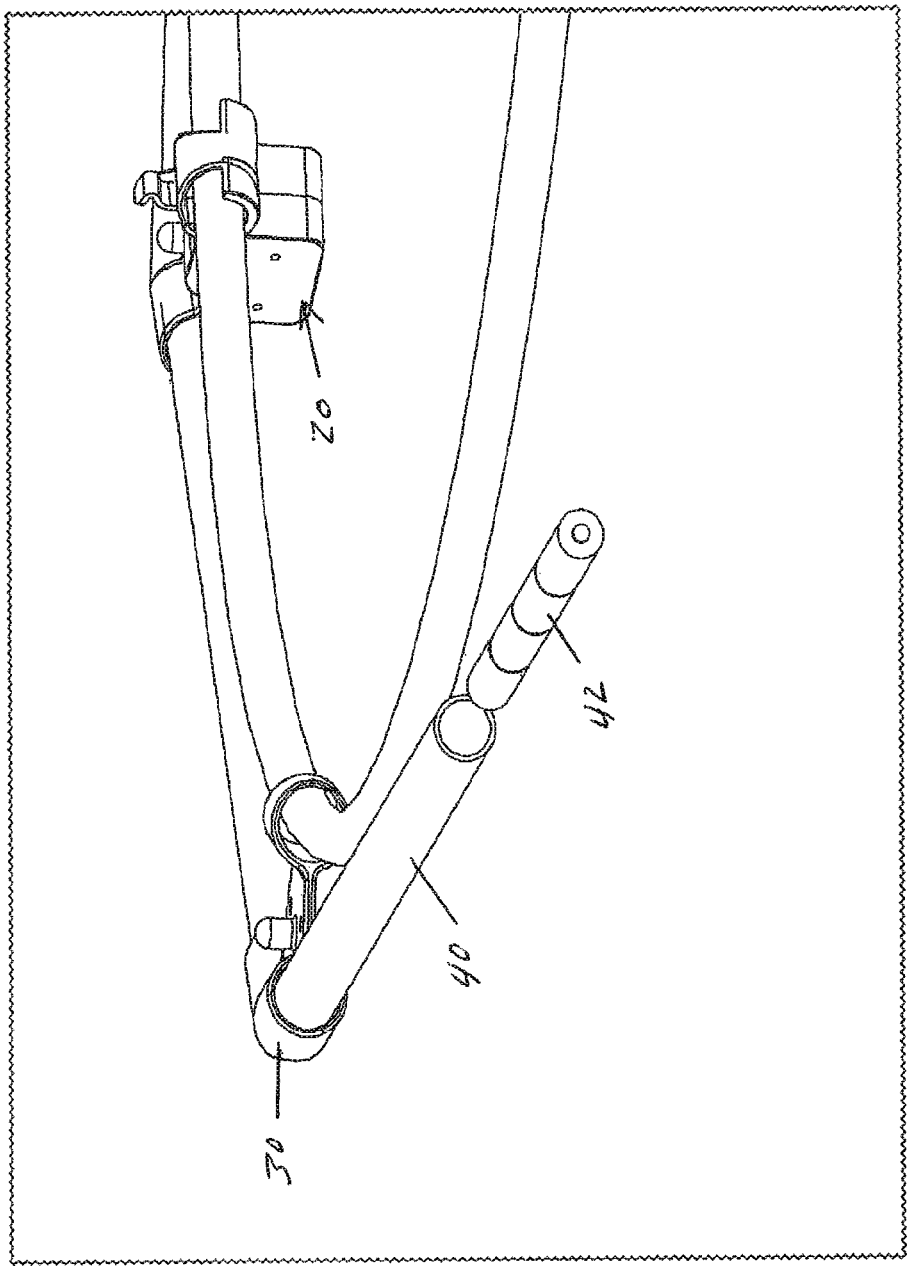


Fig. 14

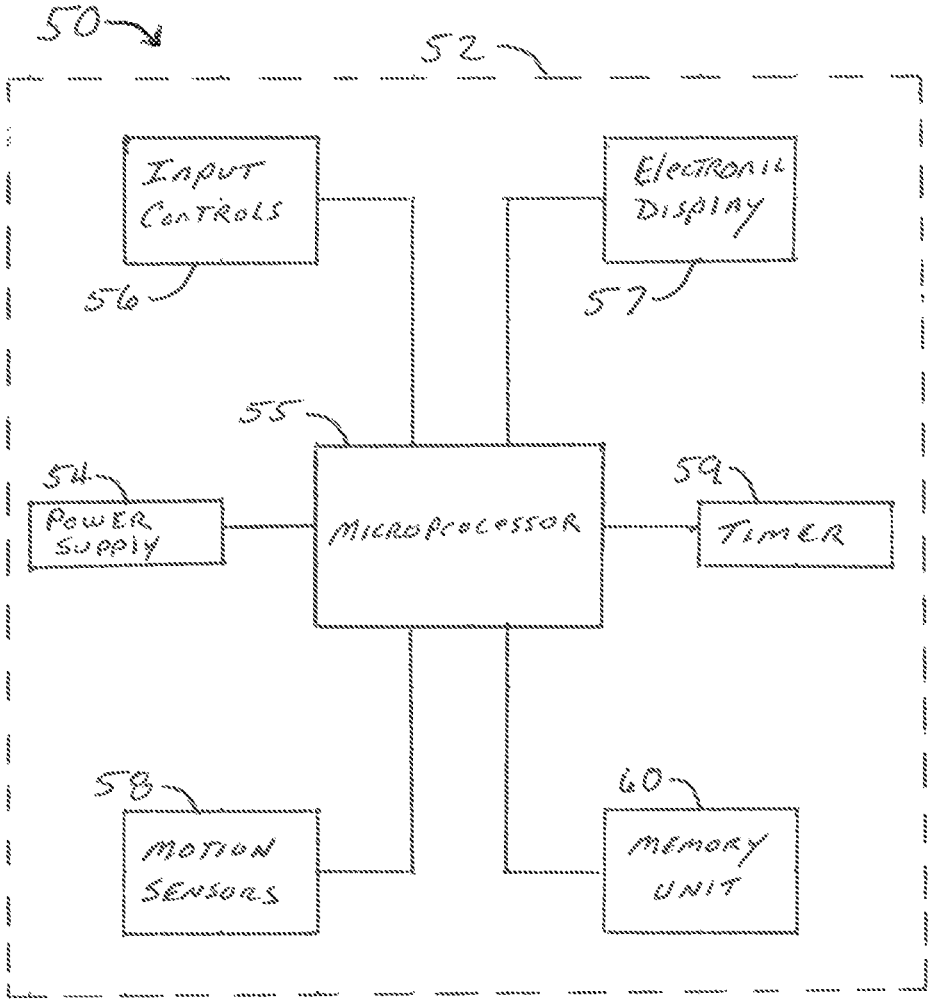

50
52
Input Controls
56
Electronic Display
57
55
54
Power Supply
Microprocessor
59
Timer
58
Motion Sensors
60
Memory Unit

FIG 15

HOOP-TYPE AMUSEMENT DEVICE AND COUNTER

CROSS REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of U.S. patent application Ser. No. 13/267,079, filed on Oct. 6, 2011, which is a continuation of U.S. patent application Ser. No. 12/041,141, filed on Mar. 3, 2008, now U.S. Pat. No. 8,033,891 which is a continuation-in-part of U.S. patent application Ser. No. 10/953,428, filed on Sep. 29, 2004, now U.S. Pat. No. 7,338,339, which is a continuation-in-part of U.S. patent application Ser. No. 10/446,925, filed May 28, 2003, now U.S. Pat. No. 6,966,814.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

N/A

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BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates, in general, to hoop-type amusement devices and, more particularly, to a counter for an improved hoop-type amusement device.

2. Description of the Background Art

The HULA HOOP® is an amusement device that was initially introduced by Wham-O, Inc. in the early 1950's. HULA HOOP is a registered trademark of Wham-O, Inc. Since introduction, the HULA HOOP has enjoyed widespread use as a device for physical exercise and amusement used by men, women, and children of all ages. The classic HULA HOOP is formed from a hollow piece of plastic tubing having connected ends so as to form an annular shape having a fixed diameter. The HULA HOOP is generally placed around a users waist, legs, arms, or even neck, and user gyrations cause the HULA HOOP to rotate about the user.

While widely popular, the classic HULA HOOP is burdened with significant limitations. Specifically, the simple annular shape of the HULA HOOP limits its functionality and playing method, such that the user is merely able to rotate the hoop about their waist often causing the user to quickly become bored. Furthermore, the simple hoop structure is further incapable of adjustment of either size or shape thereby limiting appeal.

In an effort to overcome such disadvantages and limitations, a variety of improvements have been proposed and used in the art of hoop-type amusement devices. For example, in an effort to improve playability and/or enhance functionality, luminous hoops, glow-in-the-dark hoops, and fluid filled hoops have been developed and used in the art. Nevertheless, there exists a need for further improvements in technology relating to hoop-type play devices to enhance enjoyment and playability.

SUMMARY OF THE INVENTION

The present invention provides an improved hoop-type amusement device adapted with a counter for counting the number of revolutions achieved by the user. The counter is preferably adapted for attachment to any of a variety of hoop type devices, including the HULA HOOP, as well as specially configured hoop type devices, such as the type that may be formed from a plurality of variously sized and shaped connectable components that are selectively interconnected by the user to form a simple or complex hoop configuration of a particular desired size and shape. Accordingly, as used herein, the term "hoop" may refer to a wide variety of shapes, including annular, square, rectangular, triangular, polygonal, etc. A counter is provided for connection to the hoop assembly. The counter functions to count the number of revolutions achieved by the user thereby allowing the user to monitor and gage performance. A counter in accordance with the present invention is preferably adapted for removable attachment to the hoop-type amusement device.

Accordingly, it is an object of the present invention to provide an improvements relating to hoop-type amusement devices.

Another object of the present invention is to provide a hoop-type amusement device formed of a plurality of connectable components.

Still another object of the present invention is to provide an improved hoop-type amusement device adapted with a counter.

BRIEF DESCRIPTION OF DRAWINGS

FIG. **1** is a side perspective view of the counter in relation with a hoop-type amusement device;

FIG. **2** is a detailed perspective view of the counter in relation with a hoop-type amusement device;

FIG. **3** is a perspective view of the counter in relation with an alternate configuration hoop-type amusement device;

FIG. **4** is a side perspective view of shows a frontal side perspective view of the counter;

FIG. **5** is an opposing side perspective view thereof;

FIG. **6** is a side view thereof;

FIG. **7** is top perspective view of an alternate embodiment of the hoop-type amusement device, wherein the counter may be incorporated on a connecting member;

FIG. **8** is a detail perspective view of a component connector adapted to receive a counter in accordance with the present invention;

FIG. **9** illustrates a component connector attached to a hoop forming member;

FIG. **10** illustrates a counter attached to the component connector shown in FIGS. **8** and **9**;

FIG. **11** depicts a composite hoop device having a counter attached to a component connector;

FIG. **12** is a detail partial perspective view of the counter attached to the component connector;

FIG. **13** is a perspective view of a hoop-type amusement device with the counter attached to a component connector;

FIG. **14** is a partial exploded view showing hoop-components adapted with a mating extender connector; and

FIG. **15** is a schematic block diagram of an alternate embodiment digital counter.

DETAILED DESCRIPTION OF THE INVENTION

With reference now to the drawings, FIGS. **1-15** show hoop-type amusement device, generally referenced as **10**,

adapted with a counter **20** in an operational position in accordance with the present invention. FIG. **1** shows counter **20** in relation with a complex hoop-type amusement device, including an inner annular hoop member **12** and an outer octagonal hoop member **14** secured in concentric relation by connectors **16**. Device **10** provides a hoop-type amusement device that rotates about the user in response to movement and gyrations produced by the user thus providing the source of amusement. In the operation of the hoop-type amusement device **10**, one point of the inner surface of the inner annular hoop member **12** remains in contact with the hips of the user, such that during one complete rotation of the device **10**, virtually every point in the entire surface of the inner annular member **12** makes contact with the hip of the user just once.

As best illustrated in FIGS. **4-6**, counter **20** is preferably adapted to function as either a mechanical or electrical tally counter device, and is specifically configured for attachment to a portion of hoop-type amusement device **10**. Counter **20** includes a housing **22** having a C-shaped connector, generally referenced as **24**. C-shaped connector **24** is preferably sized and shaped so as to allow for removable attachment of counter housing **22** to inner annular member **12** thereby allowing for removable attachment of counter **20**. As should be apparent, C-shaped connector **24** fits tightly enough around the inner annular member **12** to ensure that the counter remains rigidly secured during the operation of the hoop-type amusement device **10**.

Counter **20** further includes a counter actuator arm **26** pivotally connected thereto and projecting from housing **22**. When counter **20** is in operative engagement with hoop inner annular member **12** actuator arm **26** projects into the void formed radially within the inner angular member **12**. Actuator arm **26** terminates in an end portion that is bent upwards so that the bottom of the actuator creates a flat surface that makes contact with the user when the actuator is triggered. As the hoop-type amusement device **10** rotates around the hips of the user, the counter actuator arm **26** is caused to move by contact with the user's body once during every rotation. In turn, every actuation of counter actuator arm **26** represents one full rotation of the hoop-type amusement device **10** about the user. The number of times the counter actuator arm **26** is activated represents the total number of times the hoop-type amusement device **10** has rotated completely around the user. Counter housing **22** further includes a transparent window **28** for displaying the tally to the user. As should be apparent, the tally is continuously updated in real time during the operation of the hoop-type amusement device **10** and actuation of arm **26**.

Counter **20** further includes a reset knob **29** to allow the user to reset the counter back to zero, or any other desired count. A counter resetting actuator **29** protrudes from the sidewall **10** of the counter housing **22**. Resetting actuator **29** is used to re-set the number that is presented on the counter display to a specific number, such as zero. The number on the display can also be reset to any number depending on the preference of the user. The counter resetting actuator **29** is preferably a rotatable knob that is turned in either a clockwise or counter clockwise direction, however any suitable reset actuator structure is considered within the scope of the present invention.

Counter **20** can be attached to the hoop-type amusement device **10** through any suitable means. In the preferred embodiment, counter **20** is attached through a simple C-shaped connector **24**. C-shaped connector **24** consists of two C-shaped extension pieces, referenced as **24***a* and **24***b*, which extend from opposing lateral ends of the bottom front side of the counter housing **22**. C-shaped extension pieces **24**A and **24**B fit around the innermost member of the hoop-type amusement device **10** forming a secure connection as to limit the lateral and vertical displacement of the counter **20** during the operation of the device **10**. In a preferred attachment embodiment, counter **20** is mounted in a position so that the front of the housing **22** faces the center of the hoop-type device **10** and the display window **28** faces vertically upward.

In a contemplated alternate embodiment a digital device may be used in lieu of the mechanical counter **20**. FIG. **15** is a schematic block diagram of an embodiment of a digital counter, generally referenced as **50**, in accordance with this embodiment. Digital counter **50** includes a housing **52** that may include a C-shaped clip for use in removably attaching housing **52** to a hoop component as disclosed hereinabove. Digital counter **50** may further include a battery power source **54**, microprocessor **55**, input controls **56** which may comprise one or more buttons, and an electronic display **57** which may comprise a LCD display to provide visual output. In addition, digital counter **30** preferably includes one or more motion sensors **58**, in electrical communication with processor **55**. Motion sensors **58** may comprise accelerometers, gyroscopes, or other suitable digital technology that enables the counter to digitally count hoop revolutions. The use of motion sensors eliminates the need for a manually actuated arm. A timer **59** is in electrical communication with microprocessor **55** and functions to provide timing data. A memory unit **60** allows for storage of data obtained by motion sensors **58** and timer **59**, as well as for data calculated by microprocessor **55** from such data. Digital counter **50** thus provides an improved system for counting hoop revolutions and time thereby enabling the calculation of various data sets based on hoop revolutions, time, and other potential input such as the height and weight of the user. Accordingly, digital counter **50** allows for the calculation and display of a variety of data including the number of hoop revolutions, use time, calories burned, revolutions per minute, etc.

FIGS. **7-13** present an alternative embodiment of the present invention, wherein the counter is adapted for attachment to a component connector coupling multiple members that are used to form a complex hoop-type device **10**. The complex device configuration can consist of multiple members of varying shapes that are each coupled together. Specifically, FIG. **8** shows a connector member **30** for use in forming an octagonal outer hoop **14** concentrically disposed around an inner circular hoop member **12**. A plurality of connectors referenced as **30** are disposed in engagement with inner member **12**, and the intersection point of two sides of the octagonal outer member **14** as best seen in FIG. **11**. Each connector **30** functions as a coupler for connecting individual side members **40** to form a complete octagonal outer member **14**, and further functions to couple octagonal outer member **14** with inner member **12**. Accordingly, each connector **30** includes a first pair of tubular openings **32** that receive members forming the outer hoop member, and a second pair of tubular openings **34** that receive members forming the inner hoop member. In addition, inserts **42** may be provided to allow for the connection of members **40** to form an enlarged hoop configuration.

Connector **30** further includes a raised, generally cylindrical, mount **36** that functions to receive a counter **20** in press fit engagement therewith. In this embodiment, counter housing **22** is attached to a mount **36** on one of the connectors **30**. In turn, the connectors **30** receive hoop side members **40** which form each side of the octagonal shaped outer member **14**. As should be apparent, counter **20** is positioned so that the C-shaped connector **24**, which protrudes from counter housing **22** extends inwards towards the center of the hoop-type

device **10**. More particularly, the C-shaped connector **24** fits around the inner circular member **12**, thereby connecting the inner member **12** to the outer member **24**.

Counter actuator arm **26** extends from the bottom of the counter housing **22**, and projects radially inward so as to be in position to engage a portion of the user's body as the hoop rotates. As with the previous disclosed embodiment of the present invention, activation of the counter actuator arm **26** causes the number stored by counter mechanism to increase by a value of one for each actuation/revolution. Since the counter actuator piece **30** can only be activated once during a full rotation of the hoop-type amusement device **10**, the value stored by the counter mechanism represents the total number of rotations performed in the operation of the device **10**. As noted above, a reset actuator **29** extends from the side of counter housing **22** into the space between the inner and outer members **12** and **14**. The reset actuator **29** can be but is not limited to a winding knob. By turning the winding knob in a specific direction, the reset actuator **29** is activated, and the number stored by the counter mechanism is set to a desired value.

The instant invention has been shown and described herein in what is considered to be the most practical and preferred embodiment. It is recognized, however, that departures may be made therefrom within the scope of the invention and that obvious structural and/or functional modifications will occur to a person skilled in the art.

What I claim is:

1. A hoop-type amusement apparatus for twirling around the waist, limbs, or neck of a user, said apparatus comprising:

an annular inner hoop component sized to permit the twirling thereof around the waist of the user;

an outer hoop component;

means for concentrically connecting said inner and outer hoop components with said outer hoop component disposed in surrounding generally concentric relation with said inner hoop component; and

an electronic counter connectable to one of said hoop components, said counter adapted to count revolutions.

2. A hoop-type amusement apparatus according to claim **1**, wherein said electronic counter includes a battery power supply, a microprocessor electrically connected to said battery power supply, at least one motion sensor, a timer, at least one input control, and an electronic display.

3. A hoop-type amusement apparatus for twirling around the waist, limbs, or neck of a user, said apparatus comprising:

an annular inner hoop component sized to permit the twirling thereof around the waist of the user;

an outer hoop component;

means for concentrically connecting said inner and outer hoop components with said outer hoop component disposed in surrounding generally concentric relation with said inner hoop component; and

means for electronically counting revolutions of said first hoop component.

4. A hoop-type amusement apparatus according to claim **3**, wherein said means for electronically counting revolutions includes a battery power supply, a microprocessor electrically connected to said battery power supply, at least one motion sensor, a timer, at least one input control, and an electronic display.

* * * * *